AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for synchronizing a base station to a mobile station, comprising:

transmitting a signal sequence K(i) of length n from the base station to the mobile station in a synchronization channel, the mobile station using the signal sequence K(i) to determine a timing of the base station, the signal sequence K(i) being obtainable by:

repeating, n1 times, a second signal sequence element K2(k) of length n2 to form a second signal sequence, the second signal sequence being modulated with first signal sequence elements K1(j) of length n1;

wherein n1 is equal to n2, and i, j and k are integers; and

achieving timeslot synchronization between the base station and the mobile station using the synchronization channel.

2. (Previously Presented) The method of claim 1, wherein n is equal to 256, n1 is equal to 16, and n2 is equal to 16.

3. (Previously Presented) The method of claim 1, further comprising forming the signal sequence K(i) by modulating the second signal sequence as follows: K(i) = K2 (i mod n2) * K1 (i div n2).

4. (Currently Amended) The method of claim 1, further comprising:

receiving, at the mobile station, a received signal sequence E(1), the signal sequence K(i) being contained in the received signal sequence E(1), the signal sequence K(i) being determined in the mobile station by obtaining a correlation sum S ~~of the signal sequence K(i) with corresponding~~ using sections of the received signal sequence E(1);

wherein the mobile station determines the correlation sum S by:

determining a partial correlation sum sequence TS(z) of the second signal sequence using corresponding parts of the received signal sequence E(1);

selecting n1 elements of the partial correlation sum sequence TS(z); and

multiplying selected elements of the partial correlation sum sequence TS(z) by first signal sequence elements K1(j).

5. (Previously Presented) The method of claim 4, wherein selecting the n1 elements comprises selecting n1 in each of n2-th elements of the partial correlation sum sequence TS(z).

6. (Currently Amended) The method of claim 9, further comprising:

receiving, at the mobile station, a received signal sequence E(1), the signal sequence K(i) being contained in the received signal sequence E(1), the signal sequence K(i) being determined in the mobile station by obtaining a correlation sums S ~~of the signal sequence K(i) with corresponding~~ using sections of the received signal sequence E(1)[[,]];

wherein the mobile station determines the correlation sum S by:

determining a partial correlation sum sequence TS(z) for first signal sequence elements K1(j) using selected elements of the received signal sequence E(1); and

multiplying n2 elements of the partial correlation sum sequence TS(z) by second signal sequence elements K2(k).

7. (Previously Presented) The method of claim 6, further comprising selecting n1 in each of n2-th elements of the received signal sequence E(1) in order to calculate a partial correlation sum TS.

8. (Previously Presented) The method of claim 9, further comprising:

storing partial correlation sums TS in the mobile station; and

using the partial correlation sums in order to determine a further correlation sum S.

9. (Previously Presented) The method of claim 1, further comprising:

determining, in the mobile station, the signal sequence K(i) using information about the first signal sequence element K1(j) and the second signal sequence element K2(k).

10. (Currently Amended) A base station comprising:

a transmitter to transmit a signal sequence K(i) of length n from the base station to a mobile station in a synchronization channel; and ~~for transmitting a synchronization sequence to synchronize the base station and a mobile station, the synchronization sequence obtainable by:~~

a processing device to obtain the signal sequence K(i) by repeating, n1 times, a second signal sequence element K2(k) of length n2, the second signal sequence element K2(k) being modulated with a first signal sequence element K1(j) of length n1, where n1 and n2 are equal, and j and k are integers;

wherein timeslot synchronization is achieved between the base station and a mobile station using the synchronization channel.

11. (Currently Amended) A mobile station comprising:

a transmitter to transmit a signal sequence K(i) of length n from the mobile station to a base station in a synchronization channel; and ~~that uses a synchronization sequence for synchronizing a base station and the mobile station, the synchronization sequence obtainable by:~~

a processing device to obtain the signal sequence K(i) by repeating, n1 times, a second signal sequence element K2(k) of length n2, the second signal sequence element K2(k) being modulated with a first signal sequence element K1(j) of length n1, where n1 and n2 are equal, and j and k are integers;

wherein timeslot synchronization is achieved between the base station and a mobile station using the synchronization channel.

12. (Currently Amended) A signal sequence K(i) of length n, the signal sequence being stored in an information carrier, the signal sequence K(i) being obtainable by:

repeating, n1 times, a second sequence element K2(k) of length n2; and

modulating a first sequence element K1(j) of length n1 into repeated second sequence elements K2(k);

wherein n1 is equal to n2, and i, j and k are integers;

wherein the signal sequence K(i) is usable by a mobile station to determine a timing of the base station; and

wherein timeslot synchronization is achievable between the base station and the mobile station using the signal sequence K(i) transmitted over a synchronization channel.